

AMENDED CLAIMS

[received by the International Bureau on 26 July 2005 (26.07.2005);
original claim 1, 3, 5, 7, 18 amended, claim 2 canceled, remaining claims renumbered]

WHAT IS CLAIMED IS:

1. An isolated polypeptide having an amino acid sequence set forth in SEQ ID NO: 14.

- 5 2. An isolated polynucleotide having
 - (a) a nucleotide sequence encoding the polypeptide of Claim 1, or
 - (b) a nucleotide sequence complementary to the nucleotide sequence (a).

- 10 3. The polynucleotide of Claim 2, which has a nucleotide sequence set forth in SEQ ID NO: 15.

4. A recombinant vector comprising the polynucleotide of Claim 2.

- 15 5. The recombinant vector of Claim 4, which has a nucleotide sequence set forth in SEQ ID NO: 15.

6. A Cell comprising the recombinant vector of Claim 4.

- 20 7. A method for producing a plant sensitive to light signal transduction, comprising the steps of:
 - (a) inserting a polynucleotide encoding the polypeptide having an amino acid sequence set forth in SEQ ID NO: 4 or 14 into an expression vector; and
 - (b) introducing the expression vector into a plant.

- 25 8. A transgenic plant produced by the method of Claim 7.

9. A plant tissue or seed derived from the plant of Claim 8.

10. A method for producing a dwarf plant, comprising the steps of:

- 5 (a) inserting a polynucleotide encoding the sequence of amino acids 1-138 of SEQ ID NO: 4 into an expression vector; and
- (b) introducing the expression vector into a plant.

11. The method of Claim 10, wherein the plant exhibits at least one
10 phenotypic trait selected from the group consisting of shorter height, multiple shoots
and floral shoot internodes, as compared to wild-type plant.

12. A transgenic plant produced by the method of Claim 10.

15 13. A plant tissue or seed derived from the transgenic plant of Claim 11.

14. The plant of Claim 8 or 12, wherein the plant is a dicotyledonous plant or
a monocotyledonous plant.

20 15. A method of identifying a phytochrome signal transduction-associated substance using the polypeptide of Claim 1 or a polynucleotide encoding the polypeptide.

25 16. A method of identifying a plant dwarfism-causing substance using a polypeptide having the sequence of amino acids 1-138 of SEQ ID NO: 4 or a

polynucleotide encoding the polypeptide.

17. The method of Claim 15 or 16, wherein the method is performed by at least one selected from the group consisting of cDNA library screening, BAC 5 (bacterial artificial chromosome) screening, DNA chips, protein chips, polymerase chain reaction (PCR), Northern blot, Southern blot, Western blot, enzyme-linked immunosorbent assay (ELISA), 2-D gel analysis, yeast 2-hybrid system, and *in vitro* binding assay.

10 18. A method for producing a protein having phosphatase activity, comprising the steps of:

- (a) inserting a polynucleotide encoding the polypeptide having an amino acid sequence set forth in SEQ ID NO: 4 or 14 into an expression vector;
- (b) introducing the expression vector into a cell;
- 15 (c) culturing the cell to express the polynucleotide; and
- (d) collecting the expressed protein from the cell culture.